Communicating agricultural information via cell phones (World Ag Cell Phone)

Executive Summary

1) Concept: Communicate agricultural information via cell phones. Content would be collected from a variety of agricultural information sources and then distributed through local cell phone networks. Some of the possible services that could offer are: soil testing system, market information via SMS, automated agricultural answering system, and agricultural information audio and video downloads.

2) Rationale: The cell phone is the most pervasive form of bi-directional communications in the hands of the smallholder farmer. The recent explosion of cell phone access has left agricultural information systems behind. The move to cell phone based systems is a natural and potentially very beneficial.

Cell phones have recently started being used in Africa for sending SMS-based information. These simple systems have already had a major impact. If data and voice services could be added to SMS, the possible uses would increase greatly. The WAgCell center could help local government agencies, agricultural NGOs and farmer cooperatives to take advantage of this exciting new tool.

Cell phones could also be used to transmit data, even video files, to cell phones with sufficient memory capacity via the cell phone's data service. The video could be watched on the cell phone's small screen or projected to a common TV set. The system could work along the lines of a podcasting system or on-demand system. A user would have requested information delivered at night when the cell phone company is not otherwise using their infrastructure. If the cell phone company could be convinced to transfer data files at off-peak times for a very low cost, that could transform information delivery to smallholder farmers.

Evidence the project can be successful: SMS messaging has already shown great potential. The FAO is using SMS messaging as a data transmission system for field workers wishing to send in agricultural reports. The Zambian farmers' union uses SMS message to distribute market prices.

Both South Asia and Africa have a large percentage of illiterate farmers. Call-in help centers have become quite popular both because of their immediacy and because one does not need to be literate to access information. This project could help smallholder farmers by creating an automated answering system which would funnel callers to the right language and content area. If, after listening to the most common answers to their question, the farmer still has questions, the automated system could direct the call to the person most able to answer the call based on language, content expertise, length in queue and cost per minute. This project would first look to current efforts to provide call-in centers and offer technical and strategic coordination.

Another service could be the creation of a soil-testing network comprised of local women. Like the Garmeen Telcom's pay-cell-phone system, local women could charge for the use of an automated soil-testing device to be sold by the project. This model has worked well for cell phones and it should be an attractive service for smallholder farmers given the significant impact fertilizers and other agricultural inputs can have on crop yields and on soil health.

3) Expected benefits of the project: This project has the potential to dramatically increase the access to the agricultural information. The cell phone is uniquely positioned to provide sophisticated, two-way communications. This may the first time the smallholder farmer has had the ability to use technology to communicate with sources of agricultural information.

While it is difficult to measure the impact of a new type of technology, we can say that the smallholder farmer is very interested in obtaining reliable agricultural information and that the cell phone realistically provides this potential.

Sustainability and scale: This project has the benefit in that the use of cell phones is projected to grow rapidly in Africa and South Asia. This project can ride on the coattails of that growth. Scaling the technical aspects, such as broadcast of agriculture-related SMS messages is trivial. The scaling of systems that utilize people will clearly be more difficult to accommodate. Fortunately, the use of a central system will allow for the sophisticated analysis of calling patterns so as to allow for the optimal deployment of human resources.

This project may be able to become self-sustaining based on user fees and fees applied to content providers. For example, the project could arrange to receive a small percentage of the normal fees applied by the cell phone company. If a normal SMS message cost ten cents, one cent could be allocated to the project by the cell phone provider.

One possible use of this system is to use a SMS based system to transfer information from automated soil testers. Local soil tester could be provided an automated soil tester with a GPS capacity. The soil tester could transfer its information via Bluetooth (a short-range wireless system) to the cell phone. The cell phone could send the results and GPS coordinates to a central server at the project. This type of system is currently being operated as described by the FAO. The system could then send back recommendations to the person running the test via SMS. If needed, it could ask for additional information. Because this server would be run as a business, the uploading of data could include a small charge. For an additional small charge, the results could be sent to the farmer whose soil is being tested. Market prices and suppliers could also be sent to the farmer. On the server side, fees could be charge to entities wanted to see the

resulting soil map of the country. As this system became more widely used and included historical perspectives, the value for accessing its content would increase. This system could become profitable enough to support other services of this project.

The distribution of audio and video via the cell phone could allow for the insertion of advertising. This could be a significant revenue source for the project. Clearly, there would have to be strict standards for advertisers so that project's content does not appear biased.

4) Projected costs of the project. The initial project would involve three African countries: Mali, Zambia, and India. The main costs will be content collection creation in local languages and into audio format. Two million should be allocated for each center. In some countries, such as Zambia and India, finding automated voice systems and third-party SMS providers should be possible. In Mali, the project might have purchase its own equipment.

5) Measures of success. There are many internal measurements that can be used to determine success. Some possible site generated statistics are the number of users, the amount and types of content, and the average ranking of content. Some external measurements could be the name recognition of the system by key stakeholders, especially that of smallholder farmers. In addition to name recognition can be percentage of usage, user experience and the likeliness of using the same again.

6) Risks: Cell phone providers may not be interested in providing these services or may want to price these services beyond the budget of the smallholder farmer.